all 12 features were associated with IDS satisfaction ($P < 0.01$), but only discrepancy scores for "easy to control blood sugar," "reduces my reluctance to use insulin," "easy to get insulin dose needed," and "convenient to use" were significant predictors of IDS satisfaction, as were HbA1C and health status ($R2 = 0.31$; $P < 0.05$). **CONCLUSION:** IDS features are important to patients with T2DM; therefore resolving discrepancies between feature importance and patient evaluation of IDS features may improve patient satisfaction and facilitate diabetes management.

PDB61

PREDICTORS OF INSULIN DELIVERY SYSTEM USE IN PATIENTS WITH TYPE 2 DIABETES

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OBJECTIVE: Understanding what Insulin Delivery System (IDS) features are important to patients with type 2 diabetes (T2DM) is essential to the development of improved IDSs. The objective of this study was to determine what characteristics are associated with (or predict) users of insulin pens vs. vial and syringe (V/S). **METHODS:** Patients with T2DM were administered a web-based survey that included questions about demographics, comorbidities, glycemic control, and insulin use; ratings of the importance of 12 IDS features; and an evaluation of features of the current IDS. Two logistic regression analyses were performed with the respondent characterization of their IDS as insulin pen or V/S as dependent variables. Variables significantly ($p < 0.05$) associated with dependent variables, a priori, were included as independent variables. **RESULTS:** A total of 681 insulin-using T2 patients in the US (52% female; mean age = 57 years; 88% Caucasian; 85% on insulin >1 year, 86% used V/S) participated in the survey. Significant predictors ($p < 0.05$) for insulin pen use: Patient: "is a homemaker" (OR, 0.177), "agrees their IDS does not interfere with plans for short trips" (OR, 5.942), "agrees their IDS is easy to carry away from home" (OR, 0.054), "rates their IDS ease to carry away from home as 'important'" (OR, 2.558), "uses Byetta" (OR, 0.067), "injects insulin >twice/day" (OR, 0.235), "has never been diagnosed with depression" (OR, 0.367). Significant predictors ($p < 0.05$) of V/S use: Patient: "is dissatisfied with their IDS regarding insulin use" (OR, 111.767), "disagrees their IDS makes it easy getting ready for next dose" (OR, 0.006), "has cancer" (OR, <0.0001), "uses Glargine" (OR, <0.0001), "is not using insulin lispro" (OR, 0.013), "has a higher number of adults in the household", "rates IDS discreetness as 'least important' " (OR, 206.347). **CONCLUSION:** Overall, multiple injections and need for portability predict insulin pen use; not valuing discreteness and dissatisfaction predict V/S use.

DIABETES/ENDOCRINE DISORDERS—Health Care Use & Policy Studies

PDB62

DETERMINANTS OF INSULIN INITIATION FOR PATIENTS WITH TYPE 2 DIABETES

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OBJECTIVE: To examine the effects of sociodemographic characteristics, health status, comorbidity, provider, medication and financial variables on insulin initiation behavior for type 2 diabetics on multiple oral antidiabetic medications. **METHODS:** The 2002–2006 MarketScan Research Databases were used to study the health care utilization and expenditure patterns of adults with type 2 diabetes in employer-sponsored health plans in the United States. The utilization patterns of 38,768 patients with Type 2 diabetes who were adherent to one oral antidiabetic medication and added a second oral medication for at least 6 months were analyzed. Two outcomes were examined: insulin initiation within 12 months and the amount of time to insulin initiation. Multivariate logistic models were used to estimate the effects of the explanatory variables on the likelihood of insulin initiation. Cox proportional hazard models with prescription drug and office visit copayments as time-varying covariates were used to estimate the effects of the explanatory variables on the amount of time to insulin initiation. **RESULTS:** A total of 16.5% of patients initiated insulin within one year. A variety of determinants were associated with insulin initiation within a year: age (Adjusted Odds Ratio 0.982, 95% CI (0.980, 0.985)), health status indicated by the presence of factors such as heart disease (AOR 1.48 (1.317, 1.654)), myocardial infarction (AOR 1.32, (1.068, 1.640)), diabetic retinopathy (AOR 1.26, (1.120, 1.406)), the number of nondiabetes medications (AOR 1.03, (1.030, 1.039)), and insulin copayments (AOR 0.998, (0.995, 1.000)). The amount of time to insulin initiation was also affected by similar factors. **CONCLUSION:** Health status appears to be the strongest predictor of insulin initiation in patients initiating insulin for type 2 diabetics who are adherent to oral medications. Providers, health plans and employers should be aware of the factors that influence the addition of a medication to a treatment regimen for chronically-ill patients.

PDB63

AN ECONOMIC EVALUATION OF A DIABETES DISEASE MANAGEMENT PROGRAM FOR ADULT MEDICAID CLIENTS IN THE STATE OF COLORADO, UNITED STATES

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OBJECTIVE: To evaluate the one to two year changes in health care costs and disease-related process measures associated with the a disease management program initiated in 2002 for higher-risk, higher-expenditure adult fee-for-service Medicaid clients with diabetes in the State of Colorado, United States. **METHODS:** This retrospective database analysis employed a pre-post and propensity-score matched analysis assessing direct costs from the perspective of a public payer. Data analyzed included comprehensive medical and pharmacy claims, patient demographics (i.e., age, gender, race), medical and pharmacy resource utilization claims (e.g., selected prescription drug use and laboratory testing procedures conducted), diagnostic information, and eligibility/enrollment status. Multivariate regression techniques were utilized to ascertain differences between the disease management and matched comparator groups. **RESULTS:** Of the 388 Medicaid clients that were eligible and initially contacted for enrollment, 41 (11%) completed at least one year and 10 (3%) completed an entire two years of the program. Enrollees were typically older, female, and of a non-white race or ethnicity. Among those enrolled for one year or more, significant decreases in overall medical costs were observed relative to matched comparators during both Year 1 and Year 2 of the interventions (Year 1 = 44.4% decrease, $p < 0.001$ and Year 2 = 67.1% decrease, $p < 0.010$). Overall pharmacy costs were lower for the disease management group during Year 2 (64.0% decrease, $p = 0.013$), as were diabetes-related pharmacy costs (64.9%, $p = 0.005$). Effect sizes based upon multivariate analyses were observed to be small. **CONCLUSION:** Based on this analysis of 41 clients completing at least one year of diabetes

disease management program, significantly lower costs were noted during Year 1 which continued and expanded through Year 2 relative to matched comparators. Beyond claims analyses, however, incremental cost-effectiveness of disease management programs must also consider program-specific expenditures and clinical outcome measures.

PDB64

PHYSICIAN PRACTICE SPECIALTY AND TYPES OF ANTI-DIABETIC TREATMENTS FOR PATIENTS WITH TYPE 2 DIABETES: ARE THEY ASSOCIATED?—A LARGE NATIONAL OBSERVATIONAL STUDY IN A MANAGED CARE SETTING

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OBJECTIVE: To examine whether physicians' practice specialties are associated with the types of anti-diabetic treatments for patients with type 2 diabetes (T2D). **METHODS:** A retrospective study design was used based. All T2D patients' (N = 1,819,323) medication histories in a 12 month period were examined and classified into 9 treatment types (no anti-diabetic medication, oral anti-diabetic medication (OAD), basal insulin only, prandial insulin only, basal insulin with OAD, prandial insulin with OAD, basal/prandial insulin, basal/prandial insulin(including premixed insulins) with OAD, other insulin regimens). Physicians practice specialties were classified into five categories (family medicine, internal medicine, other primary care specialists, endocrinologists, other specialties). A two-way contingency table was created with Chi-square test and Fisher's exact test to examine the possible association between physicians' practice specialty and the types of anti-diabetic treatments they prescribed. **RESULTS:** Both the Chi-square test and the Fisher's exact test had $p < 0.0001$, indicating that physicians' practice specialty and their patients' anti-diabetic treatment choices were statistically significantly associated. The contingency table suggests that the percent of patients receiving no anti-diabetic medications varied across specialties from 36.0% in patients who visited an endocrinologist to 49% and 52% in patients who visited a family medicine physician or internist, respectively. The percent of patients receiving OAD only varied across specialties from 33.1% in patients who visited an endocrinologist to 46.8% in patients who saw a family medicine physician, and 43.6% in patients under the care of an internist. And the percent of patients receiving insulin as part of their regimen varied across specialties from 4.12% in patients who visited a family medicine physician to 12.3% in patients who visited an endocrinologist. **CONCLUSION:** Physicians' practice specialty is strongly associated with anti-diabetic medications prescribed for patients with T2D. Further research to examine outcomes differences across physician specialties is needed.

PDB65

COMPARISON OF FOUR HEALTH STATE PREFERENCE MEASURES AMONG PATIENTS ENROLLED IN THE ACTION TO CONTROL CARDIOVASCULAR RISK IN DIABETES TRIAL

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OBJECTIVE: In the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial (a 10-year, 70 site study of diabetes treatments), four health state preference measures (HSPMs), which vary in theoretical constructs, are being collected. Our objectives were to compare baseline values of the feeling thermometer (FT), the Health Utilities Index, Mark 2 and Mark 3 (HUI-2 and HUI-3), and the SF-6D, derived from the Short Form 36 and to explore associations between each HSPM and 29 baseline clinical and demographic characteristics. **METHODS:** Participants (n = 2053) were randomly selected for the cost effectiveness sub-study of ACCORD. To compare the HSPMs, we determined correlations between the measures, by overall score and within each quartile range. We used multivariate regression models to identify relationships between clinical and demographic characteristics for each HSPM. **RESULTS:** The mean ± standard deviation HSPMs were: FT = 0.756 ± 0.167, HUI-2 = 0.823 ± 0.146, HUI-3 = 0.712 ± 0.260, and SF-6D = 0.684 ± 0.085. Although all 4 measures were significantly correlated with each other (Spearman r = 0.29–0.84 ($p < 0.0001$); relationships were weaker between the FT and the other measures (0.29–0.38) and strongest between the two HUI measures (0.84). By quartiles of HSPM, significant correlations were more common at the lowest quartile. In multivariate regression analyses, we identified significant associations ($p < 0.01$) between HSPM values and age (positive), gender (lower for females), years of education (positive), and race (lower for non-white). Clinical characteristics inversely associated with HSPMs were duration of diabetes, current smoking, secondary cardiovascular disease, total cholesterol, waist circumference, and body mass index. Number of medications (blood pressure, glycemic, or lipid) were not significantly associated with HSPMs. Glycosylated hemoglobin values were inversely related to FT only. **CONCLUSION:** Our results suggest that the four instruments,result in different HSPM values. Relationships with clinical and demographic variables vary by HSPM. Therefore, results of cost-effectiveness results may be impacted by the specific HSPM applied.

PDB66

HEALTH CARE UTILISATION AND EXPENDITURES ASSOCIATED WITH TREATMENTS OF DIABETES MELLITUS WITHIN THE SLOVAK REPUBLIC

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OBJECTIVE: The aim of this study was to collect comparable and reliable data about consumption of drugs for treatment of diabetes mellitus in Slovakia during the period 1996–2006. **METHODS:** Data of wholesalers (following ATC/DDD), who are legally obliged provide this information to the Slovak Institute for Drug Control, was used for the analysis. The results were expressed in the numbers of the packages, finance units (€) and defined daily doses per 1000 inhabitants per day (DID). **RESULTS:** The collected data shows a moderate increases in the antidiabetic's consumption from 1996 to 2006 in term of DID (in 1996 (27.03), in 2001 (32.62) and in 2006 (37.90). A slight increase in A10AB group (Insulins and analogues, fast-acting) in 1996 (1.88), in 2001 (2.79) and in 2006 (4.64), a slight decrease in A10AC group (Insulins and analogues, intermediate-acting) in 1996 (4.25), in 2001 (3.74) and in 2006 (3.35), a moderate increase in A10AD (Insulins and analogues, intermediate-acting combin.) in 1996 (0.51), in 2001 (2.36) and in 2006 (3.25), a steady increase in A10AE (Insulins and analogues, long-acting) in 2001 (0.03) and in 2006 (0.89), a dramatic increase in A10BA (Biguanides) in 1996 (4.45), in 2001 (5.75) and in 2006 (9.46), relatively stable consumption in A10BB (Sulfonamides, urea derivatives) in 1996 (15.33), in 2001 (17.19) and in 2006 (14.76)